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**UNITED STATES DISTRICT COURT
NORTHERN DISTRICT OF CALIFORNIA¹
SAN FRANCISCO DIVISION**

IN RE: VOLKSWAGEN “CLEAN
DIESEL” MARKETING, SALES
PRACTICES, AND PRODUCTS
LIABILITY LITIGATION

This Document Relates to:

*United States of America v. Volkswagen
AG, et al.*, Case No. 3:16-cv-00295

MDL No. 2672 CRB (JSC)

**UNITED STATES’ AMENDED
COMPLAINT IN *United States of
America v. Volkswagen AG, et al.* Case
No. 2:16-cv-10006 (E.D. Mich. 2016)**

Hon. Charles R. Breyer

¹ The original complaint in this matter was filed in the Eastern District of Michigan. On January 15, 2016, the Eastern District of Michigan entered an order transferring this case to the Northern District of California for inclusion in Multi-District Litigation 2672 and noted that future documents should be filed with the Northern District of California. *United States v. Volkswagen AG, et al*, Case No. 2:16-cv-10006 (E.D. Mi.) (Dkt. 12). As the Eastern District of Michigan has continuing jurisdiction over this case, the jurisdiction and venue allegations in Paragraphs 2-15 relate to that Court.

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AMENDED COMPLAINT

The United States of America, by authority of the Attorney General of the United States and at the request of the Administrator of the United States Environmental Protection Agency (“EPA”), files this amended complaint and alleges as follows:

NATURE OF ACTION

1. This is a civil action brought pursuant to Sections 204 and 205 of the Clean Air Act (the “Act”), 42 U.S.C. §§ 7523 and 7524, for injunctive relief and the assessment of civil penalties against Volkswagen AG, Audi AG, Volkswagen Group of America, Inc. (“VWoA”), Volkswagen Group of America Chattanooga Operations, LLC (“VWoA Chattanooga”), Dr. Ing. h.c. F. Porsche AG (“Porsche AG”), and Porsche Cars North America, Inc. (collectively, “VW”) for violations of the Act and regulations promulgated thereunder.

JURISDICTION AND VENUE

2. This Court has jurisdiction over the subject matter of and the parties to this action pursuant to Sections 203, 204, and 205 of the Act, 42 U.S.C. §§ 7522, 7523, and 7524, and 28 U.S.C. §§ 1331, 1345, and 1355.

3. This Court has personal jurisdiction over Defendant Volkswagen AG under Mich. Comp. Laws § 600.705 because Volkswagen AG transacts business in Michigan. In addition, this Court’s exercise of jurisdiction over Defendant Volkswagen AG is consistent with due process.

4. Among other things, Defendant Volkswagen AG interacts with Defendant VWoA, its wholly-owned subsidiary, which has an office in Auburn Hills, Michigan and this judicial district, by regularly submitting information to VWoA necessary for VWoA to complete the required applications to obtain certificates of conformity (“COCs”) for a significant number

1 of the vehicles Volkswagen AG sells in the United States. The United States alleges, subject to a
2 reasonable opportunity for further investigation or discovery, that in connection with this and
3 other interactions with its wholly-owned subsidiary, Volkswagen AG has attended meetings at
4 VWoA's Auburn Hills office, and corresponded, telephoned, and otherwise communicated with
5 VWoA's Auburn Hills office. Volkswagen AG has also attended meetings at, and had other
6 communications with, EPA's Ann Arbor, Michigan Office of Transportation and Air Quality
7 ("OTAQ"), the EPA office in charge of issuing COCs. Further, Volkswagen AG delivered or
8 arranged for delivery of its cars to the United States with the intent to market and sell them in all
9 50 states, including Michigan, and in fact, cars were sold in Michigan.
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12 5. This Court has personal jurisdiction over Defendant VWoA under Mich. Comp.
13 Laws § 600.705 because it transacts business in Michigan. In addition, this Court's exercise of
14 jurisdiction over VWoA is consistent with due process.
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16 6. Among other things, VWoA has an Engineering and Environmental Office in
17 Auburn Hills, Michigan from which it interacts with EPA OTAQ in connection with obtaining
18 many of the COCs for vehicles sold in the United States, including many of the light duty diesel
19 vehicles addressed in this Complaint. Further, VWoA delivered or arranged for delivery of
20 many of the vehicles addressed in this Complaint, within the United States with the intent to
21 market and sell them in all 50 states, including Michigan, and in fact, cars were sold in
22 Michigan.
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24 7. This Court has personal jurisdiction over Defendant Audi AG under Mich. Comp.
25 Laws § 600.705 because Audi AG transacts business in Michigan. In addition, this Court's
26 exercise of jurisdiction over Audi AG is consistent with due process.
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28 8. Among other things, Audi AG has interacted with VWoA's Auburn Hills,

1 Michigan office by regularly submitting information to VWoA's Auburn Hills office necessary
2 for VWoA to complete the required applications to obtain COCs for the vehicles that Audi AG
3 sells in the United States, including the light duty diesel vehicles addressed in this Complaint.
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5 The United States alleges, subject to a reasonable opportunity for further investigation or
6 discovery, that in connection with this and other interactions with VWoA, Audi AG has attended
7 meetings at VWoA's Auburn Hills office, and corresponded, telephoned, and otherwise
8 communicated with VWoA's Auburn Hills office. Audi AG has also attended meetings at, and
9 had other communications with, EPA's OTAQ in Ann Arbor, Michigan. Further, Audi AG
10 delivered or arranged for delivery of its cars to the United States with the intent to market and
11 sell them in all 50 states, including Michigan, and in fact, cars were sold in Michigan.
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13 9. This Court has personal jurisdiction over Defendant Volkswagen Group of
14 America Chattanooga Operations, LLC, under Mich. Comp. Laws § 600.705 because VWoA
15 Chattanooga transacts business in Michigan. In addition, this Court's exercise of jurisdiction
16 over VWoA Chattanooga is consistent with due process.
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18 10. The United States alleges, subject to a reasonable opportunity for further
19 investigation or discovery, that: among other things, VWoA is the corporate parent of VWoA
20 Chattanooga; VWoA Chattanooga manufactures certain Passats; VWoA Chattanooga interacts
21 with VWoA, in connection with vehicle manufacturing and other matters; in connection with this
22 and other interactions with its parent company, VWoA Chattanooga has attended meetings at
23 VWoA's Auburn Hills, Michigan office and/or corresponded, telephoned and otherwise
24 communicated with VWoA's Auburn Hills office. Further, VWoA Chattanooga delivered or
25 arranged for delivery of its cars within the United States with the intent to market and sell them
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1 in all 50 states, including Michigan, and in fact, cars were sold in Michigan.

2 11. This Court has personal jurisdiction over Defendant Porsche AG under Mich.
3 Comp. Laws § 600.705 because Porsche AG transacts business in Michigan. In addition, this
4 Court's exercise of jurisdiction over Porsche AG is consistent with due process.
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6 12. The United States alleges, subject to a reasonable opportunity for further
7 investigation or discovery, that: among other things, Porsche AG has interacted with VWoA's
8 Auburn Hills, Michigan office in connection with obtaining COCs for the Porsche light duty
9 diesel vehicles addressed in this Complaint; in connection with this and other interactions with
10 VWoA, Porsche AG has attended meetings at VWoA's Auburn Hills office and/or corresponded,
11 telephoned, and otherwise communicated with VWoA's Auburn Hills office. Porsche AG has
12 also attended meetings at, and had other communications with, EPA's OTAQ in Ann Arbor,
13 Michigan. Further, Porsche AG delivered or arranged for delivery of Porsche cars to the United
14 States with the intent to market and sell them in all 50 states, including Michigan, and in fact,
15 cars were sold in Michigan.
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18 13. This Court has personal jurisdiction over Defendant Porsche Cars North America,
19 Inc. under Mich. Comp. Laws § 600.705 because Porsche Cars North America, Inc. transacts
20 business in Michigan. In addition, this Court's exercise of jurisdiction over Porsche Cars North
21 America, Inc. is consistent with due process.
22

23 14. The United States alleges, subject to a reasonable opportunity for further
24 investigation or discovery, that: among other things, Porsche Cars North America, Inc. has
25 interacted with VWoA's Auburn Hills, Michigan office in connection with obtaining COCs for
26 the Porsche light duty diesel vehicles addressed in this Complaint; in connection with this and
27 other interactions with VWoA, Porsche Cars North America, Inc. has attended meetings at
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1 VWoA's Auburn Hills office and/or corresponded, telephoned, and otherwise communicated
2 with VWoA's Auburn Hills office. Porsche Cars North America, Inc. has also attended meetings
3 at, and had other communications with, EPA's OTAQ in Ann Arbor, Michigan. Further,
4 Porsche Cars North America, Inc. delivered or arranged for delivery of Porsche cars within the
5 United States with the intent to market and sell them in all 50 states, including Michigan, and in
6 fact, cars were sold in Michigan.

8 15. Venue is proper in this jurisdiction pursuant to Sections 204 and 205 of the Act,
9 42 U.S.C. §§ 7523 and 7524, because violations occurred in this judicial district and VWoA has
10 a corporate office within this judicial district.

12 **DEFENDANTS**

13 16. Volkswagen AG is a publicly-held German corporation.

14 17. Volkswagen AG is a "person" within the meaning of Section 302(e) of the Act, 42
15 U.S.C. § 7602(e).

16 18. Volkswagen AG is a "manufacturer" within the meaning of Section 216(1) of the
17 Act, 42 U.S.C. § 7550(1).

18 19. Volkswagen Group of America, Inc. is incorporated under the laws of the State of
19 New Jersey, and is a wholly-owned subsidiary of Volkswagen AG.

20 20. Volkswagen Group of America, Inc. is a "person" within the meaning of Section
21 302(e) of the Act, 42 U.S.C. § 7602(e).

22 21. Volkswagen Group of America, Inc. is a "manufacturer" within the meaning of
23 Section 216(1) of the Act, 42 U.S.C. § 7550(1).

24 22. Volkswagen Group of America Chattanooga Operations, LLC is incorporated
25 under the laws of the State of Tennessee, and is a wholly-owned subsidiary of VWoA.
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1 23. Volkswagen Group of America Chattanooga Operations, LLC is a “person”
2 within the meaning of Section 302(e) of the Act, 42 U.S.C. § 7602(e).

3 24. Volkswagen Group of America Chattanooga Operations, LLC is a “manufacturer”
4 within the meaning of Section 216(1) of the Act, 42 U.S.C. § 7550(1).

5 25. Audi AG is a German corporation, and is approximately 99.55% owned by
6 Volkswagen AG.

7 26. Audi AG is a “person” within the meaning of Section 302(e) of the Act, 42 U.S.C.
8 § 7602(e).

9 27. Audi AG is a “manufacturer” within the meaning of Section 216(1) of the Act, 42
10 U.S.C. § 7550(1).

11 28. Porsche AG is a German corporation, and is wholly-owned by Volkswagen AG.

12 29. Porsche AG is a “person” within the meaning of Section 302(e) of the Act, 42
13 U.S.C. § 7602(e).

14 30. Porsche AG is a “manufacturer” within the meaning of Section 216(1) of the Act,
15 42 U.S.C. § 7550(1).

16 31. Porsche Cars North America, Inc. is a Delaware corporation, and is a wholly-
17 owned subsidiary of Porsche AG.

18 32. Porsche Cars North America, Inc. is a “person” within the meaning of Section
19 302(e) of the Act, 42 U.S.C. § 7602(e).

20 33. Porsche Cars North America, Inc. is a “manufacturer” within the meaning of
21 Section 216(1) of the Act, 42 U.S.C. § 7550(1).

22 34. At all times relevant to this action, each Defendant described in Paragraphs 16
23 through 33 was engaged in the business of manufacturing new motor vehicles, and selling,
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1 offering for sale, introducing into commerce, delivering for introduction into commerce, or
 2 importing (or causing the foregoing with respect to) these vehicles in the United States.

3 **STATUTORY AND REGULATORY BACKGROUND**

4
 5 35. This action arises under Title II of the Act, as amended, 42 U.S.C. § 7521 *et seq.*,
 6 and the regulations promulgated thereunder, which aim to protect human health and the
 7 environment by reducing emissions of nitrogen oxides (“NOx”) and other pollutants from mobile
 8 sources of air pollution, including new motor vehicles.

9
 10 36. NOx is a family of highly reactive gases that play a major role in the atmospheric
 11 reactions with volatile organic compounds that produce ozone in the atmosphere. Breathing
 12 ozone can trigger a variety of health problems including chest pain, coughing, throat irritation,
 13 and congestion. Breathing ozone can also worsen bronchitis, emphysema, and asthma, and can
 14 lead to premature death. Children are at greatest risk of experiencing negative health impacts
 15 from exposure to ozone. Additionally, recent scientific studies indicate that the direct health
 16 effects of NOx are worse than previously understood, including respiratory problems, damage to
 17 lung tissue, and premature death.

18
 19 37. Section 202(a) of the Act, 42 U.S.C. § 7521(a), requires EPA to promulgate
 20 emission standards for new motor vehicles for NOx, and other air pollutants.

21
 22 38. 40 C.F.R. Part 86 sets emission standards and test procedures for light-duty motor
 23 vehicles, including emission standards for NOx. *See* 40 C.F.R. § 86.1811-04.

24 **A. Certificates of Conformity and Prohibition on Uncertified Motor Vehicles**

25 39. Light-duty vehicles must satisfy emission standards for certain air pollutants. 40
 26 C.F.R. §§ 86.1811-04, 86.1811-09, 86.1811-10. EPA administers a certification program to
 27 ensure that every new motor vehicle introduced into United States commerce satisfies applicable
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1 emission standards. 42 U.S.C. § 7521. Under this program, EPA issues COCs and thereby
 2 regulates the introduction of new motor vehicles into United States commerce.

3 40. To obtain a COC, a manufacturer must submit an application to EPA for each
 4 model year and for each test group of vehicles that it intends to enter into United States
 5 commerce. 40 C.F.R. § 86.1843-01. A test group is comprised of vehicles with similar
 6 emissions profiles for pollutants regulated under the Act. *See, e.g.*, 40 C.F.R. §§ 86.1803-01,
 7 86.1827-01.

9 41. Vehicles are covered by a COC only if the vehicles are as described in the
 10 manufacturer's application for the COC "in all material respects." 40 C.F.R. § 86.1848-10(c)(6).
 11

12 42. EPA issues COCs "upon such terms . . . as [the Administrator] may prescribe."
 13 42 U.S.C. § 7525(a)(1); *see also* 40 C.F.R. § 86.1848-01(b) (authorizing EPA to issue COCs on
 14 any terms that are necessary and appropriate to assure that new motor vehicles satisfy the
 15 requirements of the CAA and its regulations).
 16

17 43. Section 203(a)(1) of the Act, 42 U.S.C. § 7522(a)(1), prohibits manufacturers of
 18 new motor vehicles from selling, offering for sale, introducing into commerce, or delivering for
 19 introduction into commerce, or any person from importing into the United States, any new motor
 20 vehicle not covered by a COC issued by EPA under regulations prescribed by the Act governing
 21 vehicle emission standards. It is also a violation to cause any of the foregoing acts. 42 U.S.C. §
 22 7522(a); 40 C.F.R. § 86.1854-12(a).
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24 **B. Prohibition on Defeat Devices and Tampering**

25 44. Each COC application must include, among other things, a list of all auxiliary
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1 emission control devices (“AECDs”) installed on the vehicles. 40 C.F.R. § 86.1844-01(d)(11).

2 45. An AECD is “any element of design which senses temperature, vehicle speed,
3 engine [revolutions per minute], transmission gear, manifold vacuum, or any other parameter for
4 the purpose of activating, modulating, delaying, or deactivating the operation of any part of the
5 emission control system.” 40 C.F.R. § 86.1803-01.

7 46. An element of design is “any control system (i.e., computer software, electronic
8 control system, emission control system, computer logic), and/or control system calibrations,
9 and/or the results of systems interaction, and/or hardware items on a motor vehicle or motor
10 vehicle engine.” 40 C.F.R. § 86.1803-01.

12 47. Each COC application must also include “a justification for each AECD, the
13 parameters they sense and control, a detailed justification of each AECD that results in a
14 reduction in effectiveness of the emission control system, and [a] rationale for why it is not a
15 defeat device.” 40 C.F.R. § 86.1844-01(d)(11).

17 48. A motor vehicle containing an AECD that can reasonably be expected to affect
18 emission controls and is not disclosed or justified in the COC application does not conform in all
19 material respects with the COC application, and is therefore not covered by the COC.

20 49. A “defeat device” is an AECD “that reduces the effectiveness of the emission
21 control system under conditions which may reasonably be expected to be encountered in normal
22 vehicle operation and use, unless: (1) Such conditions are substantially included in the Federal
23 emission test procedure; (2) The need for the AECD is justified in terms of protecting the vehicle
24 against damage or accident; (3) The AECD does not go beyond the requirements of engine
25 starting; or (4) The AECD applies only for emergency vehicles” 40 C.F.R. § 86.1803-01.
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1 50. Section 203(a)(3)(B) of the Act, 42 U.S.C. § 7522(a)(3)(B), makes it a violation
 2 “for any person to manufacture or sell, or offer to sell, or install, any part or component intended
 3 for use with, or as part of, any motor vehicle or motor vehicle engine, where a principal effect of
 4 the part or component is to bypass, defeat, or render inoperative any device or element of design
 5 installed on or in a motor vehicle or motor vehicle engine in compliance with regulations under
 6 this subchapter, and where the person knows or should know that such part or component is
 7 being offered for sale or installed for such use or put to such use.” *See also* 40 C.F.R. § 86.1854-
 8 12(a)(3)(ii).
 9

10 51. Section 203(a)(3)(A) of the Act, 42 U.S.C. § 7522(a)(3)(A), prohibits any person
 11 from removing or rendering inoperative any device or element of design installed on a motor
 12 vehicle in compliance with the regulations promulgated under Title II of the Act prior to its sale
 13 and delivery to the ultimate purchaser. This provision also prohibits any person from knowingly
 14 removing or rendering inoperative any device or element of design installed on a motor vehicle
 15 in compliance with the regulations promulgated under Title II of the Act after its sale and
 16 delivery to the ultimate purchaser. 42 U.S.C. § 7522(a)(3)(A).
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18 52. It is also a violation to cause any of the acts set forth in Section 203(a)(3). 42
 19 U.S.C. § 7522(a); 40 C.F.R. § 86.1854-12(a).
 20

21 **C. Reporting Requirements**

22 53. Section 208(a) of the Act, 42 U.S.C. § 7542(a), requires that “[e]very
 23 manufacturer of new motor vehicles . . . establish and maintain records, perform tests . . . make
 24 reports, and provide information the Administrator may reasonably require to determine whether
 25 the manufacturer or other person has acted or is acting in compliance” with Part A of Title II of
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1 the Act.

2 54. Section 203(a)(2) of the Act, 42 U.S.C. § 7522(a)(2), prohibits any person from
3 failing or refusing to make reports or provide information to EPA pursuant to Section 208 of the
4 Act, 42 U.S.C. § 7542. It is also a violation to cause any of the foregoing acts. 42 U.S.C. §
5 7522(a); 40 C.F.R. § 86.1854-12(a).
6

7 **GENERAL ALLEGATIONS**

8 55. Volkswagen AG, Audi AG, VWoA and VWoA Chattanooga sold, offered for
9 sale, introduced into commerce, delivered for introduction into commerce, or imported into the
10 United States (or caused one or more of the foregoing acts), new motor vehicles identified in
11 Appendix A to this Complaint (“2.0L Subject Vehicles”).
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13 56. Volkswagen AG, Audi AG, and VWoA Chattanooga manufactured 2.0L Subject
14 Vehicles that were intended to be imported into the United States and sold, offered for sale,
15 introduced into commerce, or delivered for introduction into commerce in the United States.
16

17 57. Each of the 2.0L Subject Vehicles is equipped with a 2.0 liter diesel engine, and is
18 part of model years 2009-2015.

19 58. In total, approximately 500,000 2.0L Subject Vehicles were sold in the United
20 States.
21

22 59. VWoA submitted to EPA, on behalf of itself, and representing Volkswagen AG
23 and Audi AG, the applications for COCs for the 2.0L Subject Vehicles.

24 60. Volkswagen AG, VWoA, Audi AG, Porsche AG, and Porsche Cars North
25 America, Inc. sold, offered for sale, introduced into commerce, delivered for introduction into
26 commerce, or imported into the United States (or caused one or more of the foregoing acts), new
27 motor vehicles identified in Appendix B to this Complaint (“3.0L Subject Vehicles”).
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1 61. Each of the 3.0L Subject Vehicles is equipped with a 3.0 liter diesel engine, and is
2 part of model years 2009-2016.

3 62. Porsche AG manufactured Porsche 3.0L Subject Vehicles that were intended to be
4 imported into the United States and sold, offered for sale, introduced into commerce, or
5 delivered for introduction into commerce in the United States.
6

7 63. Audi AG and Volkswagen AG manufactured 3.0L Subject Vehicles, except for
8 the Porsche 3.0L Subject Vehicles, intended to be imported into the United States and sold,
9 offered for sale, introduced into commerce, delivered for introduction into commerce in the
10 United States.
11

12 64. In total, approximately 90,000 3.0L Subject Vehicles were sold in the United
13 States.

14 65. VWoA submitted to EPA, on behalf of itself, and representing Volkswagen AG
15 and Audi AG, the applications for COCs for certain 3.0L Subject Vehicles.
16

17 66. Porsche Cars North America, Inc. submitted to EPA, on behalf of itself, and
18 representing Porsche AG, the applications for COCs for the Porsche 3.0L Subject Vehicles.

19 67. The COC applications for the 2.0L and 3.0L Subject Vehicles were submitted to
20 EPA using an online database.
21

22 68. At all times relevant to this Complaint, at the time that a manufacturer submits an
23 initial COC application for a test group of vehicles on EPA's online database, the manufacturer
24 must certify that the vehicles covered by that test group are free of defeat devices and strategies
25 before the application can be submitted.

26 69. Each COC issued by EPA during the time period relevant to this Complaint states
27 on its face that the certificate covers only those new motor vehicles that conform, in all material
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1 respects, to the design specifications provided to EPA in the certificate application for such
2 vehicle.

3 70. Each application for a COC constitutes a “report [and/or] information the
4 Administrator may reasonably require . . .” to assess compliance with the Act, within the
5 meaning of Section 208(a) of the Act, 42 U.S.C. § 7542(a).
6

7 **A. Electronic Control Modules in the Subject Vehicles**

8 71. Modern vehicle engines are equipped with electronic control modules (“ECMs”),
9 also known as electronic control units (“ECUs”), that control functions in the vehicles using
10 software integrated in the ECM hardware. For each function (for example, the rate of fuel
11 injected into the engine), the software includes algorithms or calibrations that process inputs (for
12 example, engine speed, temperature) to the ECM and sends a control signal to the components of
13 the engine to perform certain actions depending on those inputs.
14

15 72. An ECM software calibration that senses inputs such as temperature, speed, or
16 transmission gear and then sends a message to a component of the engine that affects the
17 operation of an emission control system in the vehicle is an “AECD” within the meaning of 40
18 C.F.R. § 86.1803-01.
19

20 73. Robert Bosch GmbH (“Bosch”) manufactures and sells ECMs, and a basic ECM
21 software set, to vehicle manufacturers.
22

23 74. The basic ECM software offered by Bosch can be customized by manufacturers
24 within certain parameters that are established by the source code for the software.

25 75. If manufacturers wish to further customize the ECM software for their vehicles,
26 they can request that Bosch change the parameters for a function in the ECM software.
27

28 76. Bosch manufactured and sold the Electronic Diesel Control-17 (“EDC17”) ECM

1 and its software to Volkswagen AG and certain of its subsidiaries, including Audi AG, for use in
2 the 2.0L and 3.0L Subject Vehicles.

3 77. Between 2005 and 2015, at the request of Volkswagen AG, Audi AG and their
4 contractors, Bosch developed customer-specific software functions for use in the Subject
5 Vehicles.
6

7 **B. Emission Control Systems in Diesel Vehicles**

8 78. NOx emissions from diesel engines can be reduced using engine control systems
9 and after-treatment systems. Diesel vehicles typically use a combination of these systems in
10 order to comply with emission standards.
11

12 79. Engine control systems reduce NOx by employing certain strategies to reduce the
13 amount of NOx that is formed in the vehicle engine during combustion. For example,
14 recirculating a portion of the exhaust gas to the combustion chamber lowers the peak combustion
15 temperature of that chamber, thereby reducing the formation of NOx in the engine. This engine
16 control system is known as “Exhaust Gas Recirculation” or “EGR.”
17

18 80. After-treatment systems remove NOx from the exhaust after combustion but prior
19 to emission from the tailpipe of the vehicle. One example of an after-treatment system is a Lean
20 NOx Trap (“LNT”), which captures and stores NOx, then, once saturated, runs a special
21 combustion cycle with an air-fuel ratio that is low in oxygen in order to reduce NOx into
22 nitrogen and oxygen. Another example is a Selective Catalytic Reduction (“SCR”) system,
23 which injects a urea (ammonia) solution into the exhaust in order to produce a chemical reaction
24 between NOx and ammonia that breaks down the NOx to nitrogen and water.
25

26 **C. The 2.0L Subject Vehicles**

27 81. Each 2.0L Subject Vehicle contains one or more AECDs that were not disclosed,
28

1 described or justified in the application for the COC that purportedly covers the 2.0L Subject
2 Vehicle.

3 82. The COC applications for the 2.0L Subject Vehicles described vehicle design
4 specifications that were in compliance with regulations promulgated under Title II of the Act,
5 including engine control systems and after-treatment systems.
6

7 83. The COC applications for the 2.0L Subject Vehicles described that certain engine
8 control systems in the 2.0L Subject Vehicles, including the EGR system, operated in such a way
9 as to control and reduce emissions of NOx from those vehicles.
10

11 84. Certain software functions and calibrations in the ECM software installed in the
12 EDC17 ECM of each 2.0L Subject Vehicle operated the engine control systems in the 2.0L
13 Subject Vehicles in the manner described in the COC applications.

14 85. The COC applications for the 2.0L Subject Vehicles described, and each of the
15 2.0L Subject Vehicles contained, after-treatment systems, either LNT or SCR, that reduce NOx
16 and other pollutants in the exhaust of the 2.0L Subject Vehicles prior to emission from the
17 tailpipe.
18

19 86. Certain software functions and calibrations in the ECM software installed in the
20 EDC17 ECM of each 2.0L Subject Vehicle operated the after-treatment system installed in that
21 vehicle in the manner described in the COC applications.
22

23 87. Each engine control system and after-treatment system described in the COC
24 applications and installed in the 2.0L Subject Vehicles, and each component thereof, is a device
25 or element of design that was installed in the 2.0L Subject Vehicles in compliance with the
26 regulations promulgated under Title II of the Act.
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1 88. The EDC17 ECM of the 2.0L Subject Vehicles contains software functions and/or
2 calibrations that sense when the vehicle is being tested for compliance with applicable emission
3 standards, based on various inputs including the position of the steering wheel, vehicle speed, the
4 duration of the engine's operation, and barometric pressure. These inputs precisely track the
5 parameters of the federal test procedure ("FTP") and other test cycles used for emission testing
6 required to obtain a COC.
7

8 89. During FTP emission testing, the 2.0L Subject Vehicles' EDC17 ECMs run
9 software functions and/or calibrations that produce compliant emission results, which VW has
10 referred to as the "dyno mode" (referring to the equipment used in emissions testing, called a
11 dynamometer). At all other times during normal vehicle operation, the 2.0L Subject Vehicles'
12 EDC17 ECM software functions and/or calibrations run a separate "road mode" that reduces the
13 effectiveness of the emission control systems in the vehicles, including engine control systems
14 and after-treatment control systems. In other words, the 2.0L Subject Vehicles' ECM software
15 tracks the parameters of the FTP and causes emission control systems to underperform (or fail to
16 operate) when the software determines that the vehicle is not undergoing the FTP.
17

18 90. This dual-mode strategy results in increased NOx emissions by a factor of up to
19 40 times above the EPA-compliant levels, depending on the type of vehicle and drive cycle (e.g.,
20 city, highway).
21

22 91. The COC applications for the 2.0L Subject Vehicles did not disclose the "road
23 mode" software functions and/or calibrations installed in the 2.0L Subject Vehicles' EDC17
24 ECM.
25

26 92. The undisclosed software functions and/or calibrations installed in the EDC17
27 ECM of the 2.0L Subject Vehicles and described in Paragraphs 88 and 89 render inoperative,
28

1 bypass, and defeat engine control systems and/or after-treatment control systems installed in
2 those vehicles.

3 93. The undisclosed design specifications of the manufactured 2.0L Subject Vehicles
4 differ in material respects from the design specifications disclosed in the 2.0L Subject Vehicles'
5 COC applications.
6

7 94. The 2.0L Subject Vehicles therefore are not covered by a COC.

8 **D. The 3.0L Subject Vehicles**

9 95. Each 3.0L Subject Vehicle contains one or more AECDs that were not disclosed,
10 described or justified in the application for the COC that purportedly covers the 3.0L Subject
11 Vehicles.
12

13 96. The COC applications for the 3.0L Subject Vehicles described vehicle design
14 specifications that were in compliance with regulations promulgated under Title II of the Act,
15 including engine control systems and after-treatment systems.
16

17 97. The COC applications for the 3.0L Subject Vehicles described that certain engine
18 control systems in the 3.0L Subject Vehicles, including the EGR system, operated in such a way
19 as to control and reduce emissions of NOx from those vehicles.

20 98. Certain software functions and calibrations in the ECM software installed in the
21 EDC17 ECM of each 3.0L Subject Vehicle operated the engine control systems in the 3.0L
22 Subject Vehicles in the manner described in the COC applications.
23

24 99. The COC applications for the 3.0L Subject Vehicles described, and each of the
25 3.0L Subject Vehicles contained, SCR after-treatment systems that reduce NOx and other
26 pollutants in the exhaust of the 3.0L Subject Vehicles prior to the exhaust being emitted from the
27 vehicle.
28

1 100. Certain software functions and calibrations in the ECM software installed in the
2 EDC17 ECM of each 3.0L Subject Vehicle operated the after-treatment system installed in that
3 vehicle in the manner described in the COC applications.

4 101. Each engine control system and after-treatment system described in the COC
5 applications and installed in the 3.0L Subject Vehicles, and each component thereof, is a device
6 or element of design that was installed in the 3.0L Subject Vehicles in compliance with the
7 regulations promulgated under Title II of the Act.

8 102. The EDC17 ECM of the 3.0L Subject Vehicles contains software functions and/or
9 calibrations that cause the vehicle to perform differently when the vehicle is being tested for
10 compliance with applicable emission standards, based on various inputs that track the FTP and/or
11 other test cycles used for emission testing required to obtain a COC, than when the vehicle is in
12 normal operation and use.

13 103. During FTP emission testing, the 3.0L Subject Vehicles' EDC17 ECMs run
14 software functions and/or calibrations that produce compliant emission results, including an
15 ECM function or calibration referred to as the "temperature conditioning mode." At other times
16 during normal vehicle operation, the 3.0L Subject Vehicles' ECM software run a separate
17 "normal mode" that reduces the effectiveness of the emission control systems. In other words,
18 the 3.0L Subject Vehicles' EDC17 ECM software tracks certain parameters of the FTP and
19 causes emission control systems to underperform (or fail to operate) when the software
20 determines that the vehicle is not undergoing the FTP.

21 104. This dual-mode strategy results in increased NO_x emissions by a factor of up to 9
22 times or more above the EPA-compliant levels, depending on the type of vehicle and drive cycle
23 (e.g., city, highway).

1 105. The COC applications for the 3.0L Subject Vehicles did not disclose the “normal
2 mode” software functions and/or calibrations installed in the 3.0L Subject Vehicles’ EDC17
3 ECM.

4 106. The undisclosed software logic and/or calibrations installed in the EDC17 ECM
5 of the 3.0L Subject Vehicles and described in Paragraphs 102 and 103 render inoperative,
6 bypass, and defeat engine control systems and/or after-treatment systems installed in those
7 vehicles.
8

9 107. The undisclosed design specifications of the manufactured 3.0L Subject Vehicles
10 differ in material respects from the design specifications disclosed in the 3.0L Subject Vehicles’
11 COC applications.
12

13 108. The 3.0L Subject Vehicles therefore are not covered by a COC.

14 **E. Development of the “Defeat Device” Software**

15 109. Volkswagen AG’s Powertrain Development division (sometimes called Engine
16 Development) is responsible for the development of motor vehicle engines, including the
17 customization of ECM software and the development of emission control systems. There are a
18 number of sub-components or departments within Powertrain Development, including Drive
19 Electronics and Diesel Engine Development. Drive Electronics has sub-components that include
20 Function Development (sometimes called Functional/Software Development) and System
21 Application Diesel. Diesel Engine Development also has sub-components that include Ultra-
22 Low Emissions Engines and Exhaust Post-Treatment. Engineers in these groups, among others,
23 work together to develop, customize, and calibrate ECM software for use in diesel engines
24 manufactured by Volkswagen AG and its subsidiaries.
25
26

27 110. Prior to 2005, engineers at Audi AG developed a software function, which
28

1 engineers at Volkswagen AG later referred to as the “Akustikfunktion,” among other aliases.

2 111. On or about November 10, 2006, Volkswagen AG’s contractor submitted a
3 request, on behalf of Volkswagen AG, for a software design change to the Akustikfunktion for
4 2.0L diesel engines that created the dual-mode strategy referred to in Paragraphs 88-89.
5

6 112. Between 2006 and 2014, employees in Volkswagen AG’s Powertrain
7 Development division, including managers, regularly communicated with each other, and
8 contractors, regarding the design and later refinements of the dual-mode strategy, referred to as
9 the “extended Akustikfunktion,” among other aliases.
10

11 113. At least as early as 2007, Volkswagen AG was aware that NOx emissions from
12 diesel vehicles intended for sale in the United States that contained the dual-mode strategy
13 emitted NOx at significantly higher levels when the vehicles were in road mode instead of dyno
14 mode.
15

16 114. Between 2008 and 2013, as 2.0L Subject Vehicles sold in the United States began
17 to age, they experienced higher rates of warranty claims for parts and components related to
18 emissions control systems.

19 115. In or around 2013, Volkswagen AG engineers developed a software update for the
20 2.0L Subject Vehicles that contained LNTs (including those that had already been sold to
21 customers) that included the angle of the steering wheel as an additional input to detect when the
22 vehicle was undergoing emission testing. The inclusion of the steering wheel angle input was
23 intended to improve the Akustikfunktion’s precision in order to reduce the stress on the emission
24 control systems.
25

26 116. In or around 2014, Volkswagen AG and VWoA updated, or caused to be updated,
27 the ECM software for 2.0L Subject Vehicles that contained LNTs (including those that had
28

1 already been sold to customers) to include the changes described in Paragraph 115. The changes
2 described in Paragraph 114 were referred to by Volkswagen AG and VWoA as the “2014 Field
3 Fix.”

4
5 117. Engineers at Audi AG were included on, or were listed as contacts for, at least one
6 change request submitted by Volkswagen AG to Bosch for functions related to the dual-mode
7 strategy in the 2.0L Subject Vehicles.

8 118. Engineers at Audi AG were responsible for customizing the EDC17 ECM
9 software used in the 3.0L Subject Vehicles, and communicating with Bosch to develop, test, and
10 calibrate the EDC17 ECM software to be used in those vehicles.

11
12 119. Between approximately 2007 and 2015, engineers at Audi AG developed,
13 calibrated, and refined the dual-mode strategy software functions described in Paragraphs 102 –
14 103, including the temperature conditioning mode.

15 120. As early as September 2011, engineers at Audi AG sent engineers at Porsche AG
16 ECM software files that could be reviewed, modified, and calibrated (within the parameters set
17 by the source code) for 3.0L diesel engines intended for use in the United States.

18
19 **F. The Investigations and Concealment Related to the 2.0L Vehicles**

20 121. On October 3 and 5, 2006 respectively, representatives of Volkswagen AG,
21 including [REDACTED], [REDACTED], [REDACTED], [REDACTED], [REDACTED], and
22 [REDACTED], representatives of Audi AG, including [REDACTED], [REDACTED],
23 [REDACTED], and [REDACTED], and senior managers in VWoA’s Engineering and
24 Environmental Office (“EEO”), including [REDACTED], [REDACTED] and [REDACTED],
25 met first with CARB in El Monte, California, and then with EPA OTAQ in Ann Arbor,
26 Michigan, to discuss the new line of “clean diesel” engines that VW and Audi planned to
27
28

1 introduce starting with model year 2009. Both EPA and CARB requested additional information
2 regarding AECDs in the vehicles and asked for follow-up meetings on that topic.

3 122. On March 19, 2007, representatives of Volkswagen AG, including [REDACTED],
4 [REDACTED], [REDACTED], [REDACTED], and [REDACTED], representatives of Audi
5 AG, including [REDACTED], [REDACTED], [REDACTED], [REDACTED], and [REDACTED]
6 [REDACTED], and representatives of VWoA, including [REDACTED], [REDACTED], and [REDACTED]
7 [REDACTED], met with representatives of EPA in Ann Arbor, Michigan to discuss the engine design of
8 VW's new 2.0L and 3.0L diesel engines and, specifically, the AECDs in those vehicles.
9 Volkswagen AG and Audi AG made presentations to EPA purporting to disclose each of the
10 AECDs in the 2.0L and 3.0L vehicles.
11

12 123. At the March 19, 2007 meeting with EPA, Volkswagen AG, VWoA and Audi AG
13 did not disclose the dual-mode strategies present in the 2.0L and 3.0L vehicles.
14

15 124. On or about March 21, 2007, representatives of Volkswagen AG, including
16 [REDACTED], [REDACTED] and [REDACTED], representatives of Audi AG, including
17 [REDACTED], [REDACTED], [REDACTED], and [REDACTED], and representatives of
18 VWoA, including [REDACTED] and [REDACTED], met with CARB in California to discuss the
19 engine design of VW's new 2.0L and 3.0L diesel engines and, specifically, the AECDs in those
20 vehicles. Volkswagen AG and Audi AG made presentations to CARB purporting to disclose all
21 AECDs in the 2.0L and 3.0L vehicles.
22

23 125. At the March 21, 2007 meeting with CARB, Volkswagen AG, VWoA and Audi
24 AG did not disclose the dual-mode strategies present in the 2.0L and 3.0L vehicles.
25

26 126. On August 3, 2007, VWoA sent EPA a letter referring to the March 19, 2007
27 meeting and representing (1) that VW had disclosed all AECDs in its "clean diesel" vehicles, and
28

1 (2) that no AECDs in those vehicles were defeat devices.

2 127. In 2008, EPA conducted confirmatory testing of certain 2009 Model Year 2.0L
3 and 3.0L Subject Vehicles to confirm compliant emissions from the vehicles using the FTP. The
4 vehicles passed the confirmatory tests. In subsequent years, EPA conducted confirmatory tests
5 on certain Subject Vehicles as new model years and models were introduced. The vehicles
6 passed the confirmatory tests and EPA subsequently certified the vehicles based in large part on
7 these test results, as well as representations made by VW in COC applications and in meetings
8 with EPA OTAQ.
9

10 128. On March 30, 2014, at the 2014 Coordinating Research Council Annual
11 Workshop on Real World Emissions, in San Diego, California, Dr. Marc Besch, of West
12 Virginia University's Center for Alternative Fuels, Engines & Emissions ("WVU") presented the
13 initial results of a study conducted in collaboration with CARB and commissioned by the
14 International Council on Clean Transportation ("ICCT") that found that on-road NOx emissions
15 from two 2.0L VW diesel vehicles (2012 Jetta and 2013 Passat) were significantly higher than
16 the applicable emission standards established by EPA regulations ("ICCT/WVU Study").
17

18 129. An employee of VWoA's EEO attended the Coordinating Research Council
19 Annual Workshop on Real World Emissions and provided a report to VWoA managers of the
20 presentation and the findings of the study.
21

22 130. On or around April 3, 2014, an employee of Audi AG e-mailed a PowerPoint
23 presentation copying several Audi AG, VW AG, and VWoA employees and managers, which
24
25
26
27
28

1 shared the reported results of the ICCT/WVU study.

2 131. In or about May 2014, WVU published the results of the ICCT/WVU Study.

3 132. Beginning in or about May 2014 through the present, CARB, in coordination with
4 EPA, has investigated the reasons for the high in-use emissions, repeatedly questioning
5 representatives from VWoA and Volkswagen AG about WVU's findings. Throughout this
6 period, CARB and EPA OTAQ held twice-monthly phone calls during which they discussed
7 certification and compliance matters of mutual concern, including the status of the investigation
8 of the high in-use emissions.
9

10 133. As of May 2014, VWoA management was aware that CARB and EPA were
11 looking into the reasons for the high in-use emissions from the 2.0L diesel vehicles identified by
12 the ICCT/WVU Study.
13

14 134. On or about May 22, 2014, [REDACTED], a certification engineer with
15 Volkswagen AG, and [REDACTED], a manager with VWoA's EEO, among other VW
16 representatives, met with CARB representatives at CARB's offices in El Monte, California. At
17 this meeting, Volkswagen AG and VWoA represented that VW believed any higher emissions
18 from its 2.0L diesel engines were attributable to various yet-to-be-identified technical issues with
19 the after-treatment emission control systems and in-use conditions not represented by the FTP.
20

21 135. On or about October 1, 2014, at a meeting with CARB at its offices in California,
22 representatives of VWoA, including at least [REDACTED] and the then-General Manager of
23 VWoA's EEO office, and representatives of Volkswagen AG, including at least [REDACTED],
24 acknowledged that VW's internal testing also found higher on-road emissions and represented
25 that the increased emissions from the vehicles studied by WVU/ICCT were attributable to
26
27
28

1 various technical issues with the after-treatment emission control systems and in-use conditions
2 not represented by the FTP.

3 136. At that meeting, and in subsequent meetings on or about November 14, 2014 and
4 December 9, 2014 with CARB, and on or about December 3, 2014 with CARB and EPA, [REDACTED]
5 [REDACTED] and [REDACTED], among other representatives of VWoA and Volkswagen AG, proposed
6 that VW conduct a voluntary recall of certain 2.0L Subject Vehicles currently on the road in
7 order to “reflash” or reprogram the EDC17 ECM software to install a new optimized software
8 calibration that would reduce NOx emissions significantly.
9

10 137. In December 2014, VWoA issued a voluntary recall for 2.0L Subject Vehicles in
11 the United States that were equipped with an SCR after-treatment system. As part of that recall,
12 new and updated ECM software was installed or “reflashed” in the ECMs of vehicles that had
13 already been sold to customers.
14

15 138. In March 2015, VWoA issued a second voluntary recall for 2.0L Subject Vehicles
16 in the United States that were equipped with an LNT after-treatment system. As part of that
17 recall, new and updated ECM software was installed or “reflashed” in the ECMs of vehicles that
18 had already been sold to customers.
19

20 139. As part of the March 2015 recall, updated ECM software that included the 2014
21 Field Fix updates was installed on 2.0L Subject Vehicles that had not previously received the
22 2014 Field Fix updates.
23

24 140. Engineers for VWoA and Volkswagen AG developed, tested, and calibrated the
25 software updates installed during the 2014 and 2015 recalls.

26 141. From approximately December 2014 through the present, CARB, in coordination
27 with EPA, conducted its own testing to further investigate the reasons behind the high NOx
28

1 emissions observed in the 2.0L Subject Vehicles during real world driving conditions. This on-
2 road and laboratory testing showed limited reduction in the rates of emission of NOx from the
3 recalled vehicles, and also revealed that the vehicles exhibited different behaviors during real
4 world driving conditions than during FTP emission testing.

5
6 142. During the course of the investigation by regulators, VWoA and Volkswagen AG
7 suggested a number of potential technical issues and in-use conditions that might explain the
8 higher emission test results, but none of those issues adequately explained why the 2.0L Subject
9 Vehicles behaved differently while operating on the FTP test cycles versus while being driven on
10 the road.

11
12 143. On or about September 3, 2015, representatives of VWoA and Volkswagen AG
13 admitted to EPA and CARB at a meeting in El Monte, California that all the 2.0L Subject
14 Vehicles contained a defeat device in the form of a software algorithm or algorithms that detect
15 when the vehicle is undergoing emission testing.

16
17 144. On September 18, 2015, EPA issued a Notice of Violation to Volkswagen AG,
18 VWoA, VWoA Chattanooga, and Audi AG, citing violations of the Act related to the dual-mode
19 strategy in the 2.0L Subject Vehicles.

20
21 145. In or around late August and September 2015, Volkswagen AG engineers in the
22 Powertrain Development Division purposefully deleted or modified files on their company
23 computers relating to the Subject Vehicles and the dual-mode strategy software after being
24 informed in advance by at least one member of the Volkswagen AG legal department that a
25 litigation hold requiring them to save such documents would be issued..

26
27 146. The United States' efforts to learn the truth about the emission exceedances and
28 other irregularities related to the 2.0L Subject Vehicles, including whether VW had committed

1 the violations of federal law alleged herein, were impeded and obstructed by material omissions
2 and misleading information provided by VWoA and Volkswagen AG.

3 147. Volkswagen AG and VWoA knowingly concealed facts that would have revealed
4 the existence of the dual-mode strategies utilized in the 2.0L Subject Vehicles to regulators when
5 they had a duty to share such information, and also engaged in affirmative misrepresentations
6 and took affirmative actions designed to conceal these facts.

7
8 148. On October 8, 2015, Mr. Michael Horn, VWoA President and Chief Executive
9 Officer, testified before the United States House of Representatives Subcommittee on Oversight
10 and Investigations Committee on Energy and Commerce, and admitted that VWoA and
11 Volkswagen AG's representations to EPA and CARB that the increased NOx emissions from the
12 2.0L Subject Vehicles were due to technical issues were false.

13
14 149. During his October 8, 2015 testimony, Mr. Horn of VWoA further admitted that
15 the installation of the "defeat device" in the 2.0L Subject Vehicles was a knowing and willful
16 decision to deceive regulators.

17
18 **G. The Investigations and Concealment Related to the 3.0L Subject Vehicles**

19 150. In or about late January 2015, representatives of CARB informed representatives
20 of Audi AG and Volkswagen AG that CARB would not approve certification of the Model Year
21 2016 3.0L Subject Vehicles until Audi could confirm that the 3.0L diesel vehicles did not have
22 the same emissions characteristics as the 2.0L diesel engine vehicles.

23
24 151. In response, managers and engineers at Audi AG and VWoA intentionally
25 presented to CARB on-road emission results from the Model Year 2016 3.0L diesel vehicles, and
26 not earlier models, because those test results showed better results than the ICCT/WVU Study.

1 152. In or around mid-March 2015, representatives of CARB held a conference call
2 with representatives of Volkswagen AG and Audi AG regarding certification of the Model Year
3 2016 3.0L Subject Vehicles. At this meeting, CARB representatives queried whether the 3.0L
4 diesel vehicles had the same problems as the 2.0L diesel vehicles.

5
6 153. At the March 2015 meeting and in related correspondence with CARB,
7 representatives of Audi AG acknowledged that real world emissions from the 3.0L Subject
8 Vehicles may be three times higher than in test conditions, but ascribed the difference to various
9 technical issues with the after-treatment emission control systems and in-use conditions not
10 represented by the FTP.

11
12 154. On or about March 23-25, 2015, representatives from Audi AG, including [REDACTED]
13 [REDACTED] and [REDACTED], Volkswagen AG, including [REDACTED], and VWoA, including [REDACTED],
14 presented on-road emissions data to CARB and represented that the higher emission results for
15 the 3.0L Subject Vehicles when measured using a tool that simulates road conditions as opposed
16 to a dynamometer were caused by different technical issues with the after-treatment emission
17 control systems and in-use conditions not represented by the FTP.

18
19 155. Between at least March 13, 2015 and April 10, 2015, employees of Porsche AG
20 circulated multiple emails among themselves and with Volkswagen AG's contractor that
21 attached EDC17 ECM software files, including the master software files, for the model year
22 2016 3.0L Subject Vehicles.

23
24 156. At least as early as April 10, 2015, employees at VWoA alerted senior managers
25 in Porsche Cars North America's regulatory compliance department that additional studies
26 presented at the 2015 Coordinating Research Council Annual Workshop on Real World
27 Emissions were similar to those presented by WVU the prior year.
28

1 157. On or about May 12, 2015, a certification engineer with Volkswagen AG involved
2 in discussions with CARB sent an email to employees at Volkswagen AG, including managers,
3 in response to testing by CARB and exclaimed (in German), “We need a story for the situation!”
4

5 158. On or about June 29, 2015, the same certification engineer again sent an email to
6 other Volkswagen AG employees, with the subject “[C]ARB Status,” and stated (in German)
7 “We must be sure to prevent the authority from testing the [2.0L Subject Vehicles that contain
8 LNTs] ... If [that vehicle type] goes onto the roller at the CARB, then we’ll have nothing more
9 to laugh about!!!!!”
10

11 159. On July 2, 2015, the certification engineer sent an email to a number of
12 Volkswagen AG employees with the subject “RE: Status Update USA,” seeking input on how to
13 respond to questions from regulators, and noting (in German), “the key word ‘creativity’ would
14 be helpful here.”
15

16 160. On or about July 23, 2015, the certification engineer sent a calendar invite to a
17 number of Volkswagen AG employees, with the subject “Status Update” and with an agenda
18 that stated (in German), “[C]ARB is still waiting for Answers We still have no good
19 explanations!!!!!”
20

21 161. On or around August 26, 2015, an engineer from Audi AG and an engineer with
22 Porsche AG were informed by another Volkswagen AG employee that CARB had used emission
23 test procedures outside of the FTP on the 2.0L Subject Vehicles and CARB had asked what
24 would happen if it ran the same tests on the 3.0L Subject Vehicles.
25

26 162. Even after EPA issued the Notice of Violation to Volkswagen AG, Audi AG, and
27 VWoA for the 2.0L Subject Vehicles on September 18, 2015, and after Mr. Horn’s testimony
28 before Congress, Audi AG, Volkswagen AG, and VWoA failed to come forward and reveal to

1 regulators that the 3.0L Subject Vehicles contain one or more undisclosed AECDs, including the
2 dual-mode strategy involving the “temperature conditioning mode.”

3 163. In fact, in the days following EPA’s issuance of a Notice of Violation for the 2.0L
4 Subject Vehicles, engineers at Audi AG continued to communicate internally about what to tell
5 CARB about the 3.0L Subject Vehicles, including whether or not they should disclose a software
6 function related to emission control systems in order to build trust with regulators.
7

8 164. Following EPA’s issuance of a Notice of Violation for the 2.0L Subject Vehicles,
9 EPA OTAQ’s NVFEL in Ann Arbor acquired a 3L Subject Vehicle (a Model Year 2014
10 Volkswagen Touareg) and ran emission tests on it using a number of different methods including
11 the same off-cycle dynamometer test procedures that CARB ran on the 2.0L Subject Vehicle.
12 EPA discovered that emission results from the 2014 Volkswagen Touareg were significantly
13 higher in nearly every form of testing other than when the vehicle precisely followed the FTP
14 procedures. The testing at NVFEL documented that even miniscule variations in the first few
15 minutes of the test procedure caused emissions to increase dramatically for all subsequent
16 testing. Subsequent testing also showed similarly high emissions in real world driving using
17 PEMS.
18

19 165. At least as early as October 7, 2015, Porsche Cars North America employees and
20 Porsche AG employees in the Certification and Emission Legislation, Regulatory Affairs group
21 were aware that EPA and Environment Canada were conducting a “defeat device investigation”
22 and in-use testing of the 3.0L Subject Vehicles.
23

24 166. As early as October 7, 2015, employees of Porsche Cars North America
25 acknowledged in internal emails that there was a possibility that the Porsche 3.0L Subject
26 Vehicles could include defeat devices.
27
28

1 167. On November 2, 2015, EPA issued a Notice of Violation to Volkswagen AG,
2 VWoA, Audi AG, Porsche AG, and Porsche Cars North America, Inc., citing violations of the
3 Act related to the dual-mode strategy involving the “temperature conditioning mode” and the
4 “normal mode,” and the resultant excess emissions in certain 3.0L diesel vehicles.
5

6 168. The existence of this dual-mode strategy was uncovered only as a result of EPA
7 and CARB’s diligence.

8 169. On that same day, November 2, 2015, Volkswagen AG issued a statement
9 denying that software had been installed in 3.0L diesel vehicles to alter emissions in a prohibited
10 manner.
11

12 170. On or about November 19, 2015, representatives of Audi AG, Volkswagen AG,
13 and VWoA, attended a meeting at EPA OTAQ offices in Ann Arbor, Michigan. At that meeting,
14 representatives of Audi AG presented to regulators and admitted that the 3.0L Subject Vehicles
15 contain three undisclosed AECDs.
16

17 171. On November 19, 2015, representatives of Porsche AG and Porsche Cars North
18 America attended a separate meeting at EPA OTAQ offices in Ann Arbor, Michigan.

19 172. At the Porsche November 19, 2015 meeting, Porsche AG stated that it installed
20 and integrated the engines, including the EDC17 ECM, into the Porsche 3.0L Subject Vehicles.
21 Porsche also stated that Audi AG developed and calibrated the EDC17 ECM software for the
22 Porsche 3.0L Subject Vehicles.
23

24 173. On November 23, 2015, Audi AG admitted in a press release that one of the
25 undisclosed AECDs - the temperature conditioning mode – is regarded as a defeat device under
26 the Act and implementing regulations.
27
28

1 174. The United States' efforts to learn the truth about the emission exceedances and
2 other irregularities related to the 3.0L Subject Vehicles, including whether VW had committed
3 the violations of federal law alleged herein, were impeded and obstructed by material omissions
4 and misleading information provided by Volkswagen AG, Audi AG, and VWoA.

5
6 175. Volkswagen AG, Audi AG and VWoA knowingly concealed facts that would
7 have revealed the existence of the dual-mode strategy utilized in the 3.0L Subject Vehicles to
8 regulators when they had a duty to share such information, and also engaged in affirmative
9 misrepresentations and took affirmative actions designed to conceal these facts.

10
11 **FIRST CLAIM FOR RELIEF**

12 **(Section 203(a)(1): Sale, Offer for Sale, Introduction or Delivery for Introduction into
Commerce, or Import of New Motor Vehicles Not Covered by COCs)**

13 176. The United States realleges paragraphs 1 through 175 above as if fully set forth
14 herein.

15 177. Volkswagen AG, Audi AG, VWoA and VWoA Chattanooga sold, offered for
16 sale, introduced into commerce, delivered for introduction into commerce, or imported the
17 approximately 500,000 2.0L Subject Vehicles that were not covered by COCs (or caused any of
18 the foregoing) because the 2.0L Subject Vehicles do not conform in all material respects to the
19 design specifications described in the applications for the COCs that purportedly cover them, in
20 that the 2.0L Subject Vehicles are equipped with undisclosed AECDs that affect the 2.0L Subject
21 Vehicles' emission controls.

22
23
24 178. Volkswagen AG, VWoA, Audi AG, Porsche AG, and Porsche Cars North
25 America, Inc. sold, offered for sale, introduced into commerce, delivered for introduction into
26 commerce, or imported the approximately 90,000 3.0L Subject Vehicles that were not covered
27 by COCs (or caused any of the foregoing) because the 3.0L Subject Vehicles do not conform in
28

1 all material respects to the design specifications described in the applications for the COCs that
 2 purportedly cover them, in that the 3.0L Subject Vehicles are equipped with undisclosed AECDs
 3 that affect the 3.0L Subject Vehicles' emission controls.

4
 5 179. Volkswagen AG, VWoA, VWoA Chattanooga, Audi AG, Porsche AG, and
 6 Porsche Cars North America, Inc. each violated Section 203(a)(1) of the Act, 42 U.S.C. §
 7 7522(a)(1), by selling, offering for sale, introducing into commerce, delivering for introduction
 8 into commerce, or importing new motor vehicles that were not covered by a COC, or by causing
 9 any of the foregoing acts.

10
 11 180. Each such violation of Section 203(a)(1) of the Act, 42 U.S.C. § 7522(a)(1), is a
 12 separate offense with respect to each new motor vehicle.

13 181. Pursuant to Sections 204(a) and 205(a) of the Act, 42 U.S.C. §§ 7523(a) and
 14 7524(a), VW is liable for injunctive relief and civil penalties of up to \$32,500 per vehicle for
 15 each violation occurring before January 13, 2009, and for injunctive relief and civil penalties of
 16 up to \$37,500 per vehicle for each violation occurring on or after January 13, 2009, 40 C.F.R. §
 17 19.4.

18 **SECOND CLAIM FOR RELIEF**

19 **(Section 203(a)(3)(B): Manufacture, Sale, Offer for Sale, or Installation of Defeat Device)**

20
 21 182. The United States realleges paragraphs 1 through 175 above as if fully set forth
 22 herein.

23 183. Volkswagen AG, VWoA, and Audi AG manufactured, sold, offered for sale, or
 24 installed parts or components (or caused any of the foregoing), intended for use with, or as part
 25 of, motor vehicles, including the road-mode AECDs installed on the 2.0L Subject Vehicles,
 26 where a principal effect of the part or component is to bypass, defeat, or render inoperative a
 27 device or element of design installed on or in the 2.0L Subject Vehicles in compliance with
 28

1 regulations under Title II of the Act, and Volkswagen AG, Audi AG, and VWoA knew or should
2 have known that such part or component was being offered for sale or installed for such use or
3 put to such use.

4
5 184. Volkswagen AG, VWoA, Audi AG, Porsche AG, and Porsche Cars North
6 America, Inc. manufactured, sold, offered for sale, or installed parts or components (or caused
7 any of the foregoing), intended for use with, or as part of, motor vehicles, including the normal-
8 mode AECDs installed on the 3.0L Subject Vehicles, where a principal effect of the part or
9 component is to bypass, defeat, or render inoperative a device or element of design installed on
10 or in the 3.0L Subject Vehicles in compliance with regulations under Title II of the Act, and
11 Volkswagen AG, VWoA, Audi AG, Porsche AG, and Porsche Cars North America, Inc. knew or
12 should have known that such part or component was being offered for sale or installed for such
13 use or put to such use.
14

15
16 185. Volkswagen AG, Audi AG, VWoA, Porsche AG, and Porsche Cars North
17 America, Inc. violated Section 203(a)(3)(B) of the Act, 42 U.S.C. § 7522(a)(3)(B), by
18 manufacturing, selling, offering for sale, or installing “defeat devices” on new motor vehicles, or
19 by causing any of the foregoing acts.

20
21 186. Each part or component that constitutes a “defeat device” manufactured, sold,
22 offered for sale, or installed on new motor vehicles (or the causing thereof) is a separate violation
23 of Section 203(a)(3)(B) of the Act, 42 U.S.C. § 7522(a)(3)(B).

24
25 187. Pursuant to Sections 204(a) and 205(a) of the Act, 42 U.S.C. §§ 7523(a) and
26 7524(a), Volkswagen AG, Audi AG, VWoA, Porsche AG, and Porsche Cars North America, Inc.
27 are liable for injunctive relief and civil penalties of up to \$2,750 per part or component that
28 constitutes a “defeat device” per 2.0L Subject Vehicle and per 3.0L Subject Vehicle for each

1 violation occurring before January 13, 2009, and for injunctive relief and civil penalties of up to
2 \$3,750 per part or component that constitutes a “defeat device” per 2.0L Subject Vehicle and per
3 3.0L Subject Vehicle for each violation occurring on or after January 13, 2009, 40 C.F.R. § 19.4.
4

5 **THIRD CLAIM FOR RELIEF**
6 **(Section 203(a)(3)(A): Tampering)**

7 188. The United States realleges paragraphs 1 through 175 above as if fully set forth
8 herein.

9 189. The road-mode AECDs have the effect of removing or rendering inoperative
10 devices or elements of design installed on or in the 2.0L Subject Vehicles in compliance with the
11 regulations promulgated under Title II of the Act.

12 190. The normal mode AECDs have the effect of removing or rendering inoperative
13 devices or elements of design installed on or in the 3.0L Subject Vehicles in compliance with the
14 regulations promulgated under Title II of the Act.

15 191. Volkswagen AG, Audi AG, VWoA, and VWoA Chattanooga violated Section
16 203(a)(3)(A) of the Act, 42 U.S.C. § 7522(a)(3)(A), by incorporating the road-mode AECDs in
17 2.0L Subject Vehicles, thereby removing or rendering inoperative elements of the emissions
18 control system installed in a new motor vehicle in compliance with regulations promulgated
19 under Title II of the Act, or by causing any of the foregoing acts.
20

21 192. Each 2.0L Subject Vehicle equipped with the road-mode AECD represents a
22 separate violation by Volkswagen AG, Audi AG, VWoA and VWoA Chattanooga of Section
23 203(a)(3)(A) of the Act, 42 U.S.C. § 7522(a)(3)(A).
24

25 193. Volkswagen AG, Audi AG, and Porsche AG violated Section 203(a)(3)(A) of the
26 Act, 42 U.S.C. § 7522(a)(3)(A), by incorporating the normal mode AECDs in 3.0L Subject
27 Vehicles, thereby removing or rendering inoperative elements of the emissions control system
28

1 installed in a new motor vehicle in compliance with regulations promulgated under Title II of the
2 Act, or by causing any of the foregoing acts.

3 194. Each 3.0L Subject Vehicle equipped with the normal mode AECD represents a
4 separate violation by Volkswagen AG, Audi AG and Porsche AG of Section 203(a)(3)(A) of the
5 Act, 42 U.S.C. § 7522(a)(3)(A).
6

7 195. The 2014 Field Fix software functions and calibrations installed in 2.0L Subject
8 Vehicles, including in connection with the 2015 recall, had the effect of removing or rendering
9 inoperative devices or elements of design installed on or in 2.0L Subject Vehicles in compliance
10 with the regulations promulgated under Title II of the Act.
11

12 196. Volkswagen AG and VWoA knew that the 2014 Field Fix software functions and
13 calibrations would remove or render inoperative the engine control and after-treatment control
14 systems installed to control emissions from the 2.0L Subject Vehicles.
15

16 197. Volkswagen AG and VWoA violated Section 203(a)(3)(A) of the Act, 42 U.S.C.
17 § 7522(a)(3)(A), by knowingly installing software functions and calibrations in 2.0L Subject
18 Vehicles, or causing such software functions and calibrations to be installed, that removed or
19 rendered inoperative elements of the emissions control system installed in a motor vehicle in
20 compliance with regulations promulgated under Title II of the Act after such vehicle had been
21 sold and delivered to an ultimate purchaser.
22

23 198. Each 2.0L Subject Vehicle that was subject to the 2014 Field Fix after it had been
24 sold to a customer represents a separate violation by Volkswagen AG and VWoA of Section
25 203(a)(3)(A) of the Act, 42 U.S.C. § 7522(a)(3)(A).
26

27 199. Pursuant to Sections 204(a) and 205(a) of the Act, 42 U.S.C. §§ 7523(a) and
28 7524(a), Volkswagen AG, Audi AG, VWoA, VWoA Chattanooga and Porsche AG are liable for

1 injunctive relief and civil penalties of up to \$32,500 per 2.0L Subject Vehicle and per 3.0L
2 Subject Vehicle for each violation occurring before January 13, 2009, and for injunctive relief
3 and civil penalties of up to \$37,500 per 2.0L Subject Vehicle and per 3.0L Subject Vehicle for
4 each violation occurring on or after January 13, 2009, 40 C.F.R. § 19.4.
5

6 **FOURTH CLAIM FOR RELIEF**
7 **(Section 203(a)(2): Reporting Violations)**

8 200. The United States realleges paragraphs 1 through 175 above as if fully set forth
9 herein.

10 201. Volkswagen AG, Audi AG and VWoA failed or caused the failure to disclose the
11 existence of the road-calibration and/or other AECDs in the COC applications for the 2.0L
12 Subject Vehicles, information reasonably required by the Administrator to determine whether
13 VW has acted or is acting in compliance with Part A of Title II of the Act.
14

15 202. Volkswagen AG, Audi AG, VWoA, Porsche AG and Porsche Cars North
16 America, Inc. failed or caused the failure to disclose the existence of the normal mode calibration
17 and/or other AECDs in the COC applications for the 3.0L Subject Vehicles, information
18 reasonably required by the Administrator to determine whether VW has acted or is acting in
19 compliance with Part A of Title II of the Act.
20

21 203. Volkswagen AG, Audi AG and VWoA failed or caused the failure to provide a
22 justification for the road-calibration and/or other undisclosed AECDs, and/or failed or caused the
23 failure to provide a rationale for why the road-calibration and/or other AECDs are not a defeat
24 device, in the COC applications for the 2.0L Subject Vehicles, in order for the Administrator to
25 determine whether VW has acted or is acting in compliance with Part A of Title II of the Act.
26

27 204. Volkswagen AG, Audi AG, VWoA, Porsche AG and Porsche Cars North
28 America, Inc. failed or caused the failure to provide a justification for the normal mode

1 calibration and/or other undisclosed AECDs, and/or failed or caused the failure to provide a
2 rationale for why the normal mode calibration and/or other AECDs are not a defeat device, in the
3 COC applications for the 3.0L Subject Vehicles, in order for the Administrator to determine
4 whether VW has acted or is acting in compliance with Part A of Title II of the Act.
5

6 205. Volkswagen AG, Audi AG, VWoA, Porsche AG and Porsche Cars North
7 America, Inc. violated Section 203(a)(2) of the Act, 42 U.S.C. § 7522(a)(2), by failing or causing
8 the failure to disclose one or more AECDs in a COC application for a test group of new motor
9 vehicles.
10

11 206. Volkswagen AG, Audi AG and VWoA violated Section 203(a)(2) of the Act, 42
12 U.S.C. § 7522(a)(2), by failing or causing the failure to provide a justification for why AECDs
13 contained in the 2.0L Subject Vehicles are not defeat devices in a COC application for a test
14 group of new motor vehicles.
15

16 207. Volkswagen AG, Audi AG, VWoA, Porsche AG and Porsche Cars North
17 America, Inc. violated Section 203(a)(2) of the Act, 42 U.S.C. § 7522(a)(2), by failing or causing
18 the failure to provide a justification for why AECDs contained in the 3.0L Subject Vehicles are
19 not defeat devices in a COC application for a test group of new motor vehicles.
20

21 208. Each failure to provide reports or information described above is a separate
22 violation of Section 203(a)(2) of the Act, 42 U.S.C. § 7522(a)(2).
23

24 209. Pursuant to Sections 204(a) and 205(a) of the Act, 42 U.S.C. §§ 7523(a) and
25 7524(a), Volkswagen AG, Audi AG, VWoA, Porsche AG and Porsche Cars North America, Inc.
26 are liable for injunctive relief and civil penalties of up to \$32,500 per day of violation of Section
27 203(a)(2) occurring before January 13, 2009, and for injunctive relief and civil penalties of up to
28

1 \$37,500 per day of violation for such violations occurring on or after January 13, 2009, 40
2 C.F.R. § 19.4.

3
4 **PRAYER FOR RELIEF**

5 WHEREFORE, Plaintiff, the United States of America, respectfully requests that the
6 Court provide the following relief:

7 a. Permanently enjoin VW from selling, offering for sale, introducing into
8 commerce, delivering for introduction into commerce, or importing in the United States (or
9 causing any of the foregoing acts) any new motor vehicle not covered by a COC issued by EPA
10 in accordance with the Act and the regulations promulgated thereunder.

11 b. Permanently enjoin VW from selling, offering for sale, introducing into
12 commerce, delivering for introduction into commerce, or importing in the United States (or
13 causing any of the foregoing acts) any new motor vehicle equipped with an AECD, except in
14 compliance with the Act and the regulations promulgated thereunder.

15 c. Permanently enjoin VW from selling, offering for sale, introducing into
16 commerce, delivering for introduction into commerce, or importing in the United States (or
17 causing any of the foregoing acts) any new motor vehicle equipped with a defeat device.

18 d. Permanently enjoin VW from bypassing, defeating, or rendering inoperative any
19 device or element of design installed on or in a new motor vehicle in compliance with regulations
20 promulgated under Title II of the Act.

21 e. Order VW to take appropriate steps, including, but not limited to, mitigation of
22 excess NOx emissions, to remedy the violations of Sections 203(a)(1), 203(a)(3)(A), and
23 203(a)(3)(B) alleged above.
24
25
26
27
28

1 f. Enter a judgment that Volkswagen AG, Audi AG, VWoA, VWoA Chattanooga,
2 Porsche AG, and Porsche Cars North America are each liable to the United States for civil
3 penalties for each violation of Section 203(a) of the Act, and assess civil penalties against those
4 entities as follows:
5

- 6 i. up to \$32,500 per 2.0L Subject Vehicle and 3.0L Subject Vehicle for each
7 violation occurring before January 13, 2009, and up to \$37,500 per 2.0L
8 Subject Vehicle and 3.0L Subject Vehicle for each violation occurring on
9 or after January 13, 2009 for violations of Section 203(a)(1) of the Act;
10
11 ii. up to \$32,500 per 2.0L Subject Vehicle and 3.0L Subject Vehicle for each
12 violation occurring before January 13, 2009, and up to \$37,500 per 2.0L
13 Subject Vehicle and 3.0L Subject Vehicle for each violation occurring on
14 or after January 13, 2009 for violations of Section 203(a)(3)(A) of the Act;
15
16 iii. up to \$2,750 per “defeat device” per 2.0L Subject Vehicle and 3.0L
17 Subject Vehicle for each violation occurring before January 13, 2009, and
18 up to \$3,750 per “defeat device” per 2.0L Subject Vehicle and 3.0L
19 Subject Vehicle for each violation occurring on or after January 13, 2009
20 for violations of Section 203(a)(3)(B) of the Act; and
21
22 iv. up to \$32,500 per day of violation occurring before January 13, 2009, and
23 up to \$37,500 per day of violation occurring on or after January 13, 2009 for
24 violations of Section 203(a)(2) of the Act.

25 g. Award the United States its costs in this action; and

26 h. Grant such other and further relief as the Court deems just and proper.
27
28

Respectfully submitted,

/s/ John C. Cruden

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United States v. Volkswagen AG, et al.**APPENDIX A TO COMPLAINT**Identification of the 2.0L Subject Vehicles

Model Year	EPA Test Group	Vehicle Make and Model(s)
2009	9VWXV02.035N	VW Jetta, VW Jetta Sportwagen
2009	9VWXV02.0U5N	VW Jetta, VW Jetta Sportwagen
2010	AVWXV02.0U5N	VW Golf, VW Jetta, VW Jetta Sportwagen, Audi A3
2011	BVWXV02.0U5N	VW Golf, VW Jetta, VW Jetta Sportwagen, Audi A3
2012	CVWXV02.0U5N	VW Golf, VW Jetta, VW Jetta Sportwagen, Audi A3
2012	CVWXV02.0U4S	VW Passat
2013	DVWXV02.0U5N	VW Beetle, VW Beetle Convertible, VW Golf, VW Jetta, VW Jetta Sportwagen, Audi A3
2013	DVWXV02.0U4S	VW Passat
2014	EVWXV02.0U5N	VW Beetle, VW Beetle Convertible, VW Golf, VW Jetta, VW Jetta Sportwagen,
2014	EVWXV02.0U4S	VW Passat
2015	FVGAV02.0VAL	VW Beetle, VW Beetle Convertible, VW Golf, VW Golf Sportwagen, VW Jetta, VW Passat, Audi A3

APPENDIX A TO UNITED STATES'

AMENDED COMPLAINT

Case No. 3:16-cv-00295

REDACTED VERSION OF DOCUMENT SOUGHT TO BE SEALED

United States v. Volkswagen AG, et al.**APPENDIX B TO COMPLAINT**Identification of the 3.0L Subject Vehicles

Model Year	EPA Test Group(s)	Vehicle Make and Model(s)
2009	9ADXT03.03LD	VW Touareg, Audi Q7
2010	AADXT03.03LD	VW Touareg, Audi Q7
2011	BADXT03.02UG BADXT03.03UG	VW Touareg Audi Q7
2012	CADXT03.02UG CADXT03.03UG	VW Touareg Audi Q7
2013	DADXT03.02UG DADXT03.03UG DPRXT03.0CDD	VW Touareg Audi Q7 Cayenne Diesel
2014	EADXT03.02UG EADXT03.03UG EPRXT03.0CDD EADXJ03.04UG	VW Touareg Audi Q7 Cayenne Diesel A6 quattro, A7 quattro, A8L, Q5
2015	FVGAT03.0NU2 FVGAT03.0NU3 FPRXT03.0CDD FVGAJ03.0NU4	VW Touareg Audi: Q7 Cayenne Diesel A6 quattro, A7 quattro, A8L, Q5
2016	GVGAT03.0NU2 GPRXT03.0CDD GVGAJ03.0NU4	VW Touareg Cayenne Diesel A6 quattro, A7 quattro, A8L, Q5

APPENDIX B TO UNITED STATES'

AMENDED COMPLAINT

Case No. 3:16-cv-00295

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